

IN THE CLAIMS

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please **AMEND** claims 1, 33, 35, and 36 as follows.

1. (CURRENTLY AMENDED) An interface connectable to a host controller and an external bus, and that performs a predetermined bus reset sequence on the external ~~bus~~bus, in response to a bus reset generated by a plug and play function according to a change in a status of the external bus, according to a process comprising:

analyzing bus reset sequence data, including identification (ID) packet, provided from the external bus, during the bus reset sequence and,

determining whether the bus reset sequence has been completed normally according to the analyzing of the bus reset sequence data, and

~~wherein the analysis circuit provides~~providing the bus reset sequence data to the host controller when ~~determined that~~according to the determining the bus reset sequence has been completed normally.

2. (PREVIOUSLY PRESENTED) An interface system having a plug and play function and connected to a host controller, wherein the interface system performs a predetermined bus reset sequence in response to a bus reset generated by the plug and play function in accordance with a change in a status of an external bus, the interface system comprising:

an analysis circuit analyzing data, as bus reset sequence data including identification (ID) packet, provided from the external bus during the bus reset sequence and determining whether the bus reset sequence has been completed normally according to the analyzing of the bus reset sequence data, wherein the analysis circuit provides the bus reset sequence data to the host controller when determined that the bus reset sequence has been completed normally.

3. (ORIGINAL) The interface system according to claim 2, wherein the analysis circuit generates the bus reset upon detecting an abnormality of the data during the data

analysis.

4. (ORIGINAL) The interface system according to claim 2, wherein the analysis circuit generates the bus reset upon detecting an abnormality of the data during the data analysis after providing the host controller with one of an interrupt event and necessary data.

5. (ORIGINAL) The interface system according to claim 2, wherein the analysis circuit provides the host controller with necessary data.

6. (ORIGINAL) The interface system according to claim 2, further comprising a buffer memory connected to the analysis circuit for storing the data provided from the external bus.

7. (ORIGINAL) The interface system according to claim 6, wherein the analysis circuit stores the data in the buffer memory and simultaneously analyzes the data.

8. (ORIGINAL) The interface system according to claim 6, wherein the analysis circuit analyzes the data stored in the buffer memory after storing the data in the buffer memory and after completion of the bus reset sequence.

9. (ORIGINAL) The interface system according to claim 2, wherein the data includes a packet provided from an external node via the external bus in the bus reset sequence, and the analysis circuit analyzes the packet to determine whether the external bus is functioning normally.

10. (ORIGINAL) The interface system according to claim 2, wherein the data includes information indicating a change in the status of the external bus, and the analysis circuit determines whether the information corresponds to the bus reset sequence.

11. (PREVIOUSLY PRESENTED) The interface system according to claim 2, further comprising:

a port circuit detecting the status of the external bus and generating associated detection information as the bus reset sequence data;

a physical layer circuit connected to the port circuit to receive the bus reset sequence data via the port circuit and generate a data packet;

a buffer memory communicably connected to the analysis circuit to store as the bus reset sequence data the detection information and the generated data packet provided by the analysis circuit via the port circuit and the physical layer circuit,

wherein the analysis circuit comprises:

a first analysis circuit communicably connected to the port circuit to analyze the detection information as the bus reset sequence data, and

a second analysis circuit communicably connected to the physical layer circuit to analyze the generated data packet as the bus reset sequence data provided during the bus reset sequence and to determine whether the bus reset sequence data is normal, wherein the analysis circuit determines whether the bus reset sequence has been completed normally based on an analysis result of the first and the second analysis circuits.

12. (ORIGINAL) The interface system according to claim 11, wherein the first analysis circuit compares the detection information with predetermined sequence information, the second analysis circuit compares the data packet with a predetermined data packet, and the analysis circuit determines whether the bus reset sequence has been completed normally based on the comparison result of the first and the second analysis circuits.

13. (PREVIOUSLY PRESENTED) An interface having a transmitting circuit and a receiving circuit, and that performs a predetermined connection procedure with a network, the interface comprising:

a self-diagnosis circuit performing self-diagnosis of the interface using data transferring between the transmitting and the receiving circuits of the interface prior to the predetermined connection procedure with the network,

wherein the interface suspends transition to the predetermined connection procedure with the network when the self-diagnosis circuit generates a diagnosis indicating an abnormality of the interface.

14. (ORIGINAL) The interface according to claim 13, wherein the self-diagnosis circuit determines whether the status of the interface satisfies a predetermined self-diagnosis initiation requirement and initiates the self-diagnosis when the self-diagnosis initiation requirement is satisfied.

15. (ORIGINAL) The interface according to claim 13, wherein the predetermined connection procedure includes a bus reset sequence.

16. (ORIGINAL) The interface according to claim 13, wherein the interface stops the operation of the interface and suspends transition to the predetermined connection procedure when the interface has an abnormality.

17. (ORIGINAL) The interface according to claim 13, wherein the interface continues to perform the self-diagnosis of the interface after performing the predetermined connection procedure, and the interface stops operation of at least a part of the interface that does not transfer data with the network when the self-diagnosis circuit generates a diagnosis indicating an abnormality of the interface.

18. (ORIGINAL) The interface according to claim 13, wherein the self-diagnosis circuit generates information when the interface has an abnormality, the information indicating the location of the abnormality.

19. (ORIGINAL) The interface according to claim 13, further comprising a data transfer control circuit for performing the predetermined connection procedure and transferring

data with the network, the data transfer control circuit including;

- a plurality of ports connected to the network and including a first port and a second port;
- a transmitting circuit connected to the plurality of ports; and
- a receiving circuit connected to the plurality of ports,

wherein the self-diagnosis circuit connects the first port and the second port to each other and tests the data transfer control circuit using the data transferred from the transmitting circuit to the receiving circuit via the first and second ports.

20. (ORIGINAL) The interface according to claim 19, wherein the self-diagnosis circuit includes:

- a self-diagnosis control circuit for determining whether the status of the interface satisfies a predetermined self-diagnosis initiation requirement, wherein the self-diagnosis control circuit generates a self-diagnosis initiation signal and performs self-diagnosis when the predetermined self-diagnosis initiation requirement is satisfied; and

- a connection control circuit connected to the self-diagnosis control circuit to connect the first and second ports to each other in response to the self-diagnosis initiation signal.

21. (ORIGINAL) The interface according to claim 20, wherein the self-diagnosis control circuit includes:

a self-diagnosis initiation detection circuit for generating the self-diagnosis initiation signal when the self-diagnosis initiation requirement is satisfied;

a shift control circuit connected to the data transfer control circuit and the self-diagnosis initiation detection circuit, wherein the shift control circuit shifts the data transfer control circuit from a data transfer mode to a self-diagnosis mode;

a data generation circuit connected to the data transfer control circuit and the self-diagnosis initiation detection circuit, wherein the data generation circuit generates diagnosis data used to test the data transfer control circuit in response to the self-diagnosis initiation signal and provides the diagnosis data to the data transfer control circuit; and

a transfer data comparator connected to the data transfer control circuit and the data generation circuit, wherein the transfer data comparator compares the diagnosis data with the data transferred from the data transfer control circuit.

22. (ORIGINAL) The interface according to claim 21, wherein the data transfer control circuit includes a plurality of registers, wherein the data generation circuit stores predetermined register data in the plurality of registers, and wherein the self-diagnosis circuit further includes a register data comparator for comparing the register data and the data provided from the data transfer control circuit and read from the plurality of registers.

23. (ORIGINAL) The interface according to claim 19, wherein the testing of the data transfer control circuit includes at least one of a direct current characteristic test of the plurality of ports, an alternating current characteristic test of the plurality of ports, and a data transfer test of the data transfer control circuit.

24. (PREVIOUSLY PRESENTED) A method of self-diagnosis by an interface that performs a predetermined connection procedure with a network, wherein the interface has a plurality of ports, a transmitting circuit, and a receiving circuit, the plurality of ports including a first port and a second port, and the transmitting and receiving circuit each being connected to the plurality of ports, the self-diagnosis method comprising:

connecting the first and second ports to each other prior to the predetermined connection procedure with the network;

transferring data from the transmitting circuit to the receiving circuit via the first and second ports;

comparing the data transferred by the transmitting circuit and data received by the receiving circuit; and

self-diagnosing the transmitting and the receiving circuits according to the comparing of the received and the transferred data between the transmitting and the receiving circuits of the interface.

25. (PREVIOUSLY PRESENTED) The self-diagnosis method according to claim 24, further comprising :

testing a direct current characteristic of the plurality of ports by transferring direct current signals between the first and second ports.

26. (PREVIOUSLY PRESENTED) The self-diagnosis method according to claim 24, further comprising:

testing an alternating current characteristic of the plurality of ports by transferring direct current signals between the first and second ports.

27. (PREVIOUSLY PRESENTED) The self-diagnosis method according to claim 24, further comprising:

determining whether the status of the interface satisfies a predetermined self-diagnosis initiation requirement, wherein the connecting is performed when the self-diagnosis initiation requirement is satisfied.

28. (ORIGINAL) The self-diagnosis method according to claim 24, wherein the predetermined connection procedure includes a bus reset sequence.

29. (PREVIOUSLY PRESENTED) The self-diagnosis method according to claim 24, further comprising :

determining whether the interface has an abnormality based on a result of the comparing step; and

suspending transition to the predetermined connection procedure when the interface is determined to have an abnormality.

30. (PREVIOUSLY PRESENTED) The self-diagnosis method according to claim 29, further comprising:

generating information when the interface has an abnormality, the information indicating the location of the abnormality.

31. (PREVIOUSLY PRESENTED) The self-diagnosis method according to claim 24, further comprising:

detecting whether the network has an abnormality after the predetermined connection procedure is performed;

performing the connecting, the transferring, and the comparing when an abnormality of the network is detected;

determining whether the interface has an abnormality based on a result of the comparing; and

stopping operation of a part of the interface that does not transfer data with the network when the interface is determined to have an abnormality.

32. (PREVIOUSLY PRESENTED) A method of transferring data comprising:
detecting a bus reset in accordance with a change in a status of a bus;
analyzing bus reset sequence data, including identification (ID) packet, provided from the bus during a bus reset sequence in response to the detecting of the bus reset;
determining whether the bus reset sequence has been performed normally based upon the analyzing of the bus reset sequence data; and
transferring the bus reset sequence data to a host controller when the bus reset sequence has been performed normally.

33. (CURRENTLY AMENDED) A method of self-diagnosis by an interface having a transmitting circuit and a receiving circuit that are communicably connectable to an external bus, and the interface performing a predetermined bus connection procedure to connect with the external bus, comprising:
connecting the transmitting circuit and the receiving circuit to each other prior to a connecting with the external bus via the predetermined bus connection procedure by the interface to connect with the external bus;
transferring data from the transmitting circuit to the receiving circuit;
comparing ~~received~~ data received by the receiving circuit with the transferred data; and
self-diagnosing the transmitting and the receiving circuits according to the comparing of the ~~received~~data transferred and the data received ~~transferred data~~ between the transmitting and the receiving circuits, respectively, of the interface.

34. (PREVIOUSLY PRESENTED) The self-diagnosis method according to claim 33, further comprising suspending transition to the predetermined connection procedure based on a result of the comparing.

35. (CURRENTLY AMENDED) A method of self-diagnosis by an interface having a transmitting circuit and a receiving circuit that are communicably connectable to an external bus, and the interface performing a predetermined bus connection procedure to connect with the external bus, comprising:

connecting the transmitting circuit and the receiving circuit to each other prior to a connecting with the external bus via the predetermined bus connection procedure by the interface to connect with the external bus; and

~~testing as the self-diagnosis a direct current characteristic of the interface by transferring~~ test direct current signals between the connected transmitting circuit and the receiving circuit of the interface, to test, as the self-diagnosis, a direct current characteristic of the interface; and

~~testing as the self-diagnosis an alternating current characteristic of the interface by~~ transferring a test data signal whose waveform is same as ~~that of data used to be transferred~~ during an actual non-test data transfer over the external bus by the transmitting and receiving circuits of the interface on the external bus, to test, as the self-diagnosis, an alternating current characteristic of the interface.

36. (CURRENTLY AMENDED) The self-diagnosis method according to claim 35, further comprising suspending transition to the predetermined bus connection procedure to connect with the external bus, based on a result of the transferring of the test direct current signals and the test data signal testing.